U.S. DEPARTMENT OF COMMERCE
Patent and Trademark Office

SEARCH REQUEST FORM 123214*

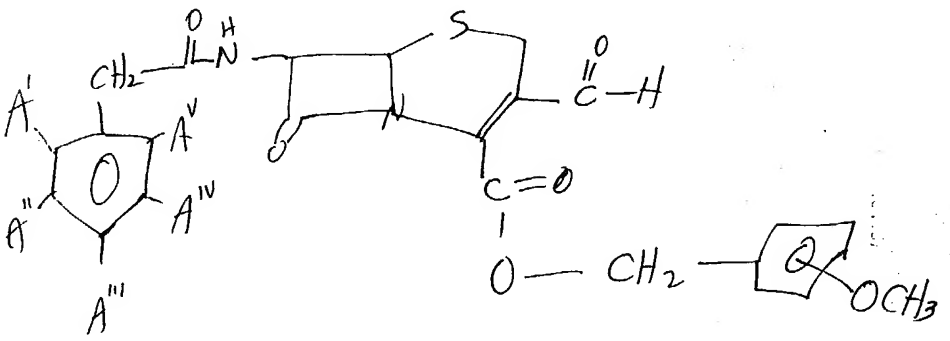
Requestor's Name: BERCH Serial Number: 10/679451

Date: 5/28/04 Phone: 571-272-0663 Art Unit: 1624

Office Rem 5C01 Mailbox 5C18

Search Topic:

Please write a detailed statement of search topic. Describe specifically as possible the subject matter to be searched. Define any terms that may have a special meaning. Give examples or relevent citations, authors, keywords, etc., if known. For sequences, please attach a copy of the sequence. You may include a copy of the broadest and/or most relevent claim(s).



all A= H/CH3

must be multicomponent

and have exactly 2 components

pp 8

STAFF USE ONLY

Point of Contact:
Alexandra Waclawiw
Technical Info. Specialist
M1 6A02 Tel: 308-4491

Date completed: 6/3/04
Searcher: R.U.
Terminal time:
Elapsed time:
CPU time:
~~Total time:~~ pp 8
~~Number of Searches:~~ online 16
Number of Databases:

Search Site
- X STIC (structure)
- CM-1
- Pre-S

Type of Search
- N.A. Sequence
- A.A. Sequence
- Structure
- Bibliographic

Vendors
- IG 4
- STN 12
- Dialog
- APS 16
- Geninfo
- SDC
- DARC/Questel
- Other

S.D. 6/3/04

PTO-1590 (9-90)

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=> d his

     (FILE 'REGISTRY' ENTERED AT 10:10:22 ON 03 JUN 2004)
                DEL HIS Y
                ACT BERCH679/A
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L1              STR
L2            3 SEA FILE=REGISTRY SSS FUL L1
               ---------
L3            1 S 332347-65-6

     FILE 'CAPLUS' ENTERED AT 10:10:58 ON 03 JUN 2004
L4            1 S L3
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=> fil reg
FILE 'REGISTRY' ENTERED AT 10:15:08 ON 03 JUN 2004
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:     2 JUN 2004  HIGHEST RN 688737-01-1
DICTIONARY FILE UPDATES:    2 JUN 2004  HIGHEST RN 688737-01-1

TSCA INFORMATION NOW CURRENT THROUGH JANUARY 6, 2004

  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

Crossover limits have been increased.  See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more
information enter HELP PROP at an arrow prompt in the file or refer
to the file summary sheet on the web at:
http://www.cas.org/ONLINE/DBSS/registryss.html

=> d que stat l2
L1                STR
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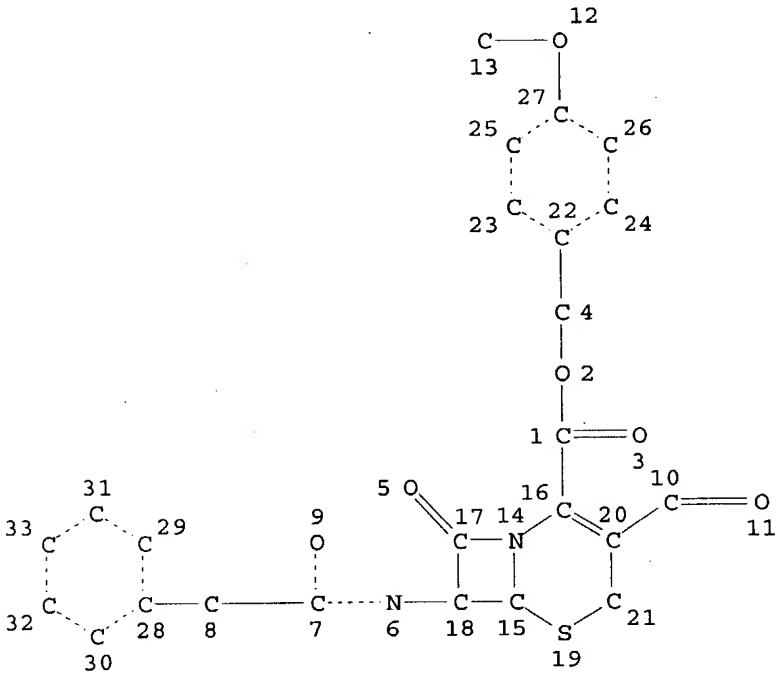

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NODE ATTRIBUTES:
DEFAULT MLEVEL IS ATOM
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS  33
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STEREO ATTRIBUTES: NONE
L2 3 SEA FILE=REGISTRY SSS FUL L1

100.0% PROCESSED 2834 ITERATIONS 3 ANSWERS
SEARCH TIME: 00.00.01

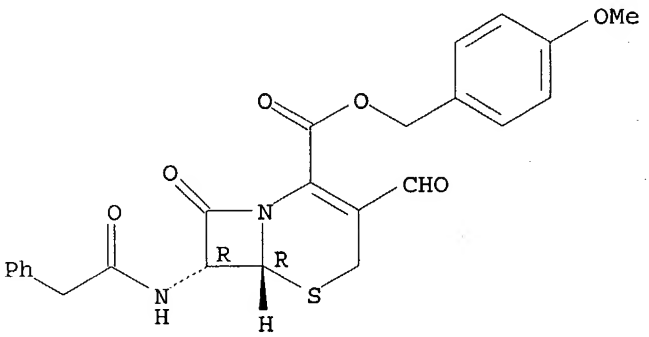
=> d l2 1-3

L2 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2004 ACS on STN
RN 332347-65-6 REGISTRY
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-formyl-8-oxo-7-[(phenylacetyl)amino]-, (4-methoxyphenyl)methyl ester, (6R,7R)-, compd. with N,N-dimethylformamide (1:1) (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN Formamide, N,N-dimethyl-, compd. with (4-methoxyphenyl)methyl (6R,7R)-3-formyl-8-oxo-7-[(phenylacetyl)amino]-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylate (1:1) (9CI)
FS STEREOSEARCH
MF C24 H22 N2 O6 S . C3 H7 N O
SR CA
LC STN Files: CA, CAPLUS, TOXCENTER, USPATFULL
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation)

CM 1

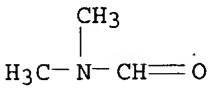
CRN 131528-29-5
CMF C24 H22 N2 O6 S

Absolute stereochemistry.



CM 2

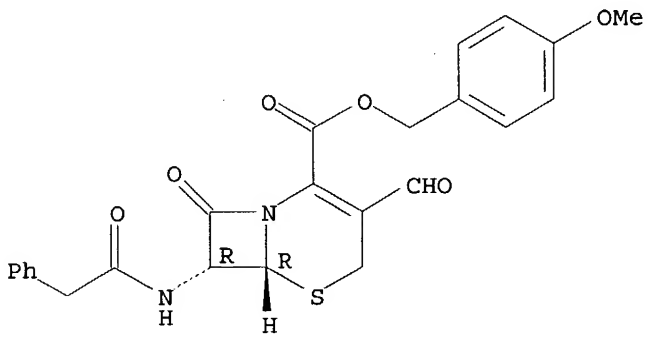
CRN 68-12-2
CMF C3 H7 N O



1 REFERENCES IN FILE CA (1907 TO DATE)
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2004 ACS on STN
RN 131528-29-5 REGISTRY
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-formyl-8-oxo-7-[(phenylacetyl)amino]-, (4-methoxyphenyl)methyl ester, (6R,7R)- (9CI) (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-formyl-8-oxo-7-[(phenylacetyl)amino]-, (4-methoxyphenyl)methyl ester, (6R-trans)-
OTHER NAMES:
CN 7-Phenylacetamido-3-formyl-3-cephem-4-carboxylic acid p-methoxybenzyl ester
FS STEREOSEARCH
MF C24 H22 N2 O6 S
CI COM
SR CA
LC STN Files: CA, CAPLUS, CASREACT, CHEMINFORMRX, TOXCENTER, USPATFULL
DT.CA CAplus document type: Journal; Patent
RL.P Roles from patents: PREP (Preparation); PROC (Process); RACT (Reactant or reagent)
RL.NP Roles from non-patents: PREP (Preparation); RACT (Reactant or reagent)

Absolute stereochemistry.

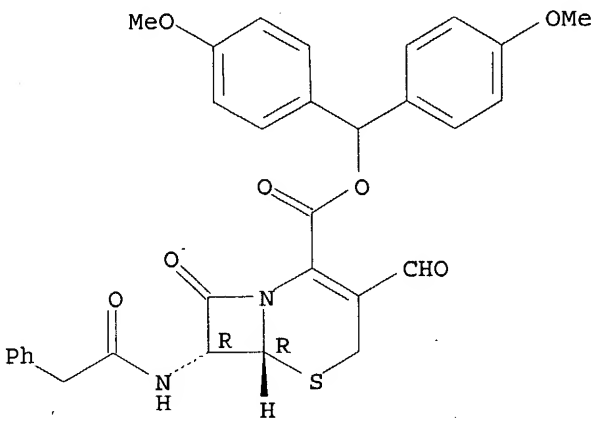


PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

7 REFERENCES IN FILE CA (1907 TO DATE)
7 REFERENCES IN FILE CAPLUS (1907 TO DATE)

L2 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2004 ACS on STN
RN 35262-99-8 REGISTRY
CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-formyl-8-oxo-7-[(phenylacetyl)amino]-, bis(4-methoxyphenyl)methyl ester, (6R-trans)- (9CI) (CA INDEX NAME)
FS STEREOSEARCH
MF C31 H28 N2 O7 S
LC STN Files: CA, CAPLUS, TOXCENTER
DT.CA CAplus document type: Patent
RL.P Roles from patents: PREP (Preparation)

Absolute stereochemistry.



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

2 REFERENCES IN FILE CA (1907 TO DATE)
2 REFERENCES IN FILE CAPLUS (1907 TO DATE)

=> d que l3
L3 1 SEA FILE=REGISTRY ABB=ON PLU=ON 332347-65-6

L3 multi component

=> fil caplus
FILE 'CAPLUS' ENTERED AT 10:15:28 ON 03 JUN 2004
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FILE COVERS 1907 - 3 Jun 2004 VOL 140 ISS 23
FILE LAST UPDATED: 2 Jun 2004 (20040602/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

'OBI' IS DEFAULT SEARCH FIELD FOR 'CAPLUS' FILE

=> d que nos l4
L3 1 SEA FILE=REGISTRY ABB=ON PLU=ON 332347-65-6
L4 1 SEA FILE=CAPLUS ABB=ON PLU=ON L3

=> d .ca hitstr

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN
ACCESSION NUMBER: 2001:247342 CAPLUS
DOCUMENT NUMBER: 134:280643
TITLE: 3-Cephem derivative crystal and method for preparing the same
INVENTOR(S): Moriyoshi, Takashi; Uosaki, Yasuhiro; Kameyama, Yutaka; Suzuki, Daisuke; Seo, Yoshiko
PATENT ASSIGNEE(S): Otsuka Kagaku Kabushiki Kaisha, Japan
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001023393	A1	20010405	WO 2000-JP6693	20000928
W: CN, KR, US				
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
JP 2001163888	A2	20010619	JP 2000-260682	20000830
JP 2002145885	A2	20020522	JP 2000-290561	20000925
EP 1227100	A1	20020731	EP 2000-962912	20000928
EP 1227100	B1	20040526		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI, CY				
US 2004073023	A1	20040415	US 2003-679451	20031007

PRIORITY APPLN. INFO.:
JP 1999-278535 A 19990930
JP 1999-279080 A 19990930
JP 2000-267059 A 20000904
WO 2000-JP6693 W 20000928
US 2002-89194 A3 20020327

AB A method for preparing crystals of a 3-cephem derivative is characterized in that it comprises subjecting a 3-cephem derivative in the form of an amorphous powder or an oil to crystallization by the use of a good solvent and a poor solvent comprising carbon dioxide in a supercrit. or subcrit. state, thereby giving a cephem derivative in a crystalline state. This process has the following advantages: (1) crystalline compound is obtained from an amorphous powder or an oil; (2) single crystallization procedure gives a compound of high purity; (3) the desired product is obtained by just removing CO2, which results in low energy cost for drying; (4) the desired component is rapidly crystallized from a tar-like viscous reaction liquid due to large dispersibility of a subcrit. liquid; (5) carbon dioxide is non-polluting, inflammable, inexpensive, and readily recyclable; and (6) once a 3-cephem derivative in a crystalline state is obtained by crystallization using subcrit. or subcrit. CO2 as a poor solvent, from thenceforth a crystalline 3-cephem derivative is quite readily obtained from an amorphous powder or an oil without using a supercrit. or subcrit. CO2. In particular, this process gives highly stabilized, yet highly reactive 7-phenylacetamido-3-formyl-3-cephem-4-carboxylic acid p-methoxybenzyl ester (I), which is useful as an intermediate for cefixime. Thus, a solution of 120 g I (amorphous powder) in 120 mL DMF containing 2% H2O was placed in a 500 mL pressure vessel fitted with a sintered filter, pressurized with CO2 to 15 MPa at 35°,

warmed to 45° and stirred for 30 min. The precipitated crystals were filtered at 45°, washed with 100 g subcrit. CO2 (35°), and depressurized to give 120.8 g crystalline I containing 50 mol% DMF (95% purity) as an inclusion complex in 94.0% yield.

IC ICM C07D501-12
ICS C07D501-24

CC 26-5 (Biomolecules and Their Synthetic Analogs)

IT **332347-65-6P**
RL: PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)
(preparation of cephem derivative crystal from amorphous powder or oil by crystallization using subcrit. carbon dioxide as poor solvent)

IT **332347-65-6P**
RL: PUR (Purification or recovery); SPN (Synthetic preparation); PREP (Preparation)
(preparation of cephem derivative crystal from amorphous powder or oil by crystallization using subcrit. carbon dioxide as poor solvent)

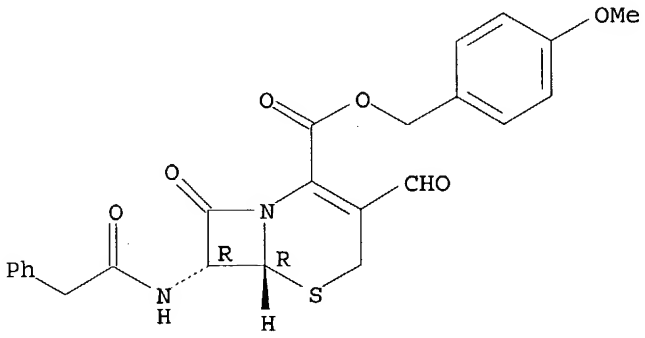
RN 332347-65-6 CAPLUS

CN 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 3-formyl-8-oxo-7-[(phenylacetyl)amino]-, (4-methoxyphenyl)methyl ester, (6R,7R)-, compd. with N,N-dimethylformamide (1:1) (9CI) (CA INDEX NAME)

CM 1

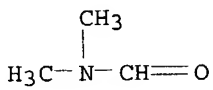
CRN 131528-29-5
CMF C24 H22 N2 O6 S

Absolute stereochemistry.



CM 2

CRN 68-12-2
CMF C3 H7 N O



REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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